April—May 1968

EMO

Federal Emergency Measures

S.D.C. Symposium

Exercise "Shakedown"

The World Today

The Skoplje Earthquake

Human Behaviour in Disaster

CANADA EMERGENCY MEASURES ORGANIZATION

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The EMO NATIONAL DIGEST publishes six editions annually to provide current information on a broad range of subjects dealing with civil emergency planning. The magazine is published in English and French and may be obtained by writing to the Canada Emergency Measures Organization, Ottawa 2, Ont.

In addition to publishing articles which reflect Canadian Government policy the Digest may also publish articles by private individuals on subjects of current interest to the emergency measures programme. The views of these contributors are not necessarily subscribed to by the Federal Government.

Director General: C. R. PATTERSON *Editor:* A. M. STIRTON

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1968

FEDERAL EMERGENCY MEASURES

Summary of observations made by
C. R. Patterson
Director General, Canada EMO

to

Alberta Emergency Measures Organization Conference at
Red Deer, Alberta
8 February 1968

Despite some discouraging newspaper reports resulting from sketchy information concerning financial cuts in the emergency measures program, it should be understood that emergency measures activities in Canada have not been abandoned by the federal government and that, within a series of new guidelines, there is a tremendous amount of preparatory work to be done in this field in Canada.

The Canadian Government itself has re-examined the needs, activities and future program of emergency measures in Canada. It has approved a modified approach leading to greater integration of the total emergency activities field in all areas of government, more effective program and financial management and an approach based upon the utilization of existing resources to put emergency plans into operation when the situation requires.

It is generally considered that while the number of nuclear weapons continues to multiply, and the magnitude if not the probability of the threat of nuclear attack on North America increases, nevertheless, because of factors such as changes in weaponry, it is probable that any possible conflict involving North America would be prefaced by a period of international tension. This would enable a skeleton of plans, facilities and equipment to be fleshed out rapidly into a highly effective operational emergency organization.

The basic material for an effective emergency measures framework is a structure of simple, comprehensive, interlocking plans.

These plans should be prepared within government departments in all areas of government and should be based on the utilization of the peacetime activities and capacity of the department in a wartime situation.

This involves the training of a core of planners, departmental officials who would be key figures in the expansion of the plan and appropriate professional and technical personnel. This would rule out the training of large numbers of volunteer leaders and volunteers, except at a time when international tension would seem to indicate that hostilities involving our nation are a possibility.

In the development of emergency operating sites and stockpiles of equipment, two things are to be borne in mind. The first is that emergency operating centres should be designed to utilize space that would normally be occupied by other tenants during normal peacetime activities. Thus, a large storage capacity suitably modified in original design could serve as storage for the life of the structure and yet provide a constant alternative use as an emergency operating centre without any significant expenditure of funds.

Secondly, as far as stockpiling is concerned, one has to assume that the total resources of the nation would be available for emergency use in a war situation. Thus, in considering furniture or food supplies for an emergency operating centre, for example, one would think in terms of requisitioning food supplies from a local wholesale concern in time of possible emergency, and in the employment of office furniture and equipment normally used for other purposes in normal peacetime activities.

In developing this new approach, the Canada Emergency Measures Organization has been directed to develop programs, to set priorities in emergency measures development after discussion with other agencies and departments, to establish a co-ordinated basis of financial management and to evaluate the progress on a regular basis to ensure that priorities are being maintained, that progress is even and that the ultimate purpose is held in mind, or modified, as the situation may require. This approach, of course, is merely logical program management.

The Canada Emergency Measures Organization is today carrying out a programmed study, in co-operation with other government departments at the federal level and in conjunction with provincial and municipal authorities, to clarify the objective, the necessary programs to reach the objective, the manpower and financial requirements and the priorities in timing to meet the total purpose of establishing substantial completion of approved emergency measures in Canada within the next seven-year period.

Pending the outcome of these studies, the Canada Emergency Measures Organization is taking action in its program development in accordance with the following guidelines:

(1) To effect the greatest possible economy at a time when government spending is being reduced, new construction and high cost equipment acquisition

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S.D.C. SYMPOSIUM

Recent sociology studies, physical research and experience in coping with emergencies have led to greater understanding of disaster-related phenomena. Because planning for an emergency can prevent or greatly reduce damage, the System Development Corporation of Santa Monica, California, in 1966, initiated a symposium for the exploration of current ideas in this area of public responsibility. Designed as a "forum for discussion of plans and operations designed to cope with emergency crises", the Second Annual Emergency Operations Symposium was held last fall in Santa Monica. In attendance at the meeting were more than 200 disaster specialists including representatives from federal government, state and local governments, industry and the academic community. Their professional fields varied through behavioural science, urban planning, operations research, engineering, geophysics, system analysis, and government administration. Canada was represented by Mr. C. R. Patterson, Director General, Canada Emergency Measures Organization. The following is a reprint of the section dealing with "Organization and Operations Analysis" published with the permission of the Editor, SDC Magazine.

Organization and Operations Analysis

Organization Under Stress

Allen Barton, director of Applied Social Research, Columbia University, began by noting a failure on the part of social science in its "inability to develop anything like an adequate theory of the normal functioning of organizations or social systems, which could provide a guide to research on disaster". Though we are nowhere near any usable models, he said, "we should at least try to get started on the conceptual tasks."

As a beginning, he presented for the group's consideration, a "typology of stress situations based on three dimensions:

(a) the degree of overload on local services imposed by the stress;

(b) the requirements for specialized skill and equipment to deal with the stress;

(c) the scope of the impact of the stress."

PARTICIPANTS

Speakers:

Allen H. Barton, Ph.D., Director of Applied Social Research, Columbia University

Walmer E. Strope, Assistant Director for Research, Office of Civil Defense

Colloquium Participants:

Joseph Romm, Acting Director, Office of Civil Defense

Ralph Burns, Region 7 Staff, Office of Emergency Operations, Santa Rosa, California

C. R. Patterson, Director General, Canada Emergency Measures Organization, Ottawa, Ontario

Robert L. Price, M.D., Deputy Director, Division of Health Mobilization, U.S. Public Health Service

To illustrate this technique, Barton drew a matrix in which the first two dimensions—degree of overload and specialized skill—were varied in intensity while the third—the scope of impact—was held constant. Into this framework he put examples of situations typifying each combination of variables. For instance, considering situations of local impact, he pointed out that a wastebasket fire would require little specialized equipment and cause no overload on organized services, while a hurricane-flood over an entire community would create a drastic overload on services and require skills and equipment "beyond any now existing" to preserve life and property from acute danger. The typology is equally useful, he indicated, for considering examples of the relief function or the reconstruction problem in various types of disaster.

Noting that "some stresses are simply beyond our ability to preserve people from," Barton pointed out that "what we have to concentrate on are those situations in between, those of moderate or drastic overload on organized services, for which mass volunteer help and the proper use of existing skill and equipment can do some good."

With respect to using the help of masses of volunteers in dealing with a widespread stress, he identified two major problems: "motivating them to help, and making their help competent and rationally allocated when it is called forth. If we are to cope with widespread disasters," he asserted, "the specialized organizations have to be trained to use the forces of the mass of volunteer helpers." For most rank-and-file members of specialized services, this change in role from the "normal emergency" creates heavy demands, Barton explained, because "they must suddenly become leaders of emergent groups of inexperienced

helpers. Training exercises with volunteers might develop skill in this new role," he suggested. "Also, ability to select volunteers on the basis of job skills or past military service might be important."

Addressing the problem of coordination, Barton noted that "in U.S. disasters there are often many jurisdictions and services involved which have no common coordinating center and no easy means of intercommunication." As a result, he said, "knowledge of conditions in the disaster area flows out to several unconnected headquarters and is not pooled; and duplicate activities take place while gaps are left in the coverage of areas and services."

Some preplanned coordinating systems work. When they do, Barton remarked, they "usually seem to be headed by someone who is a normal leader of emergency actions or a powerful governmental figure." Since directing disaster operations "involves skills going considerably beyond those of running one close-knit organization and dealing with limited-scale emergencies," Barton believes this natural leader needs "special practice in the problems of coordinating many organizations and dealing with mass public actions in a large-scale emergency."

A major organizational problem he identified as "finding how to use our tradition of local autonomy and local public participation in a world which demands more professionalism and more coordinated planning over large areas." Noting that large corporations have begun to find a better balance between centralized planning and decentralized management, he suggested that governmental structures might also learn "to grow in both directions." In addition, disaster-related organizations can play a part, since fire and police auxiliaries "represent the volunteer tradition" while cooperative disaster coordinating centers, "represent the necessities of large-scale coordination."

Looking beyond metropolitan borders, Barton observed that "when a local system is drastically overloaded . . . there must be effective ways of mobilizing outside aid." State, regional and national disaster centers, "with close relations to both public agencies and private sources of key supplies," could be organized into this vital network.

Underscoring the need for further research into the dynamics of organizations under stress, Barton suggested that the results of investigations could prove valuable not only for disaster situations but for many other social problems as well.

Concept of Operations Under Nuclear Attack

"A prerequisite for operational planning is a well defined concept of operations upon which planning can be based," asserted Walmer Strope, OCD's Assistant Director of Research. Plans emanating from his office are concerned with emergency operations in the event of nuclear attack. While "initiation of general war by any present nuclear power is considered unlikely, as long as the world's nuclear war-making capability exists and spreads, there is a possibility that general war could occur through accident, miscalculation, an irrational act, or the unplanned escalation of limited war, as well as by a deliberate act." Hence the necessity for civil defense preparations.

Among the policy assumptions underlying the civil defense operational plan is the ascendancy of local responsibility. During emergency operations, Strope emphasized, "direct control of all government and civilian forces and resources, including those federal civilian employees and material resources made available to them (lies with) state governors and chief executives of local governments."

Another basic principle is that "standardization of the concept (of defense operations) is essential if organizational elements from different areas are to function in a cooperative and effective way."

The basic functions of federal civil defense organizations in Strope's view are those of coordination of planning and organization activities and the provision of "those unique civil defense skills and capabilities not available in existing government organizations."

In discussing the conceptual framework for planning operations under attack, the research director concentrated on two major elements: the description of basic operating situations and the designation of operating zones with jurisdictional responsibility for implementing plans.

Situations are categorized in terms of the degree of seriousness of the two main hazards produced by nuclear explosions: fire and radiation. "The range of fire conditions," Strope explained, "is divided into high-risk and low-risk conditions depending on whether the fires are considered to be uncontrollable or controllable. The range of fallout radiation situations is divided into a high-risk situation and low-risk situation at 50R/hr." The possible combinations of high, low and negligible fire and radiation conditions lead to a matrix of nine basic operating situations.

For each situation there is a set of recommended priority actions which might deal with, for example, the maintenance of shelters, the control and suppression of fires, medical treatment and relocation of the population. "The contingency plan establishes initial operational priorities for emergency action and specific doctrine, assignments, and procedures for rapid and effective response by emergency operating forces."

Strope then discussed problems of organization and communication within the framework of the operating zone concept. In the event of attack, "an unambiguous line of reporting and of direction and control to state and federal levels is essential," he said. Therefore, contiguous operating zones, divided "generally along jurisdictional boundaries," have been designated. "The operating zone defines the level of operational control

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that deals directly with the accomplishment of emergency operations." Most operating zones are cities, towns and counties, although military bases and certain institutions and industrial facilities also form zones.

"If communities know how to operate under emergency conditions," stressed Strope, "loss of life and property can be limited." In line with this objective, "plans and operations at each level of government are intended to coordinate emergency actions among zones, and to initiate prompt and effective aid where needed."

Organizations, Perspectives, Plans and Practice—A Colloquium

Office of Civil Defense

The fundamental organization, function and policy of the Office of Civil Defense—"what we think our organization is designed to do and some of the assumptions under which it would operate in the emergency situation"—were presented to the symposium by Joseph Romm, acting director.

OCD's place in the defense structure is unique, Romm said, in that "civil defense is the only defense program that is dependent on federal, state and local coordinated organizational operation." At the federal level, effecting this coordination means that "we define the program and relate it to other programs. We issue guidance on how to accomplish the building program in civil defense, and provide financial assistance to try and make it happen."

A factor influencing plans is that in both legislation and executive orders, there is a clear-cut division between survival and post-attack recovery—a division Romm criticized. "In practice and application, this distinction is not at all clear. Recovery is obviously dependent on the level of survival and who and what is left. At the same time, the credibility of the survival program is extremely dependent on a recovery capability."

By contrast, he pointed out that state and local governments make "no distinction between a building organization and an operating organization." Nor is there a distinction between "the emergency operational responsibilities and actions they would perform in an attack situation and those they perform now in a peacetime emergency when called upon." Structurally, therefore, "there is a difference between how the state and local governments are organized and how we're organized at the federal level." Operational capability, including the warning system, communications networks and operating centers, exists at both levels.

The federal government has 12,000 radiation monitoring stations equipped with trained personnel. At the state and locallevel, there are 50,00 equipped monitoring stations, and an additional 84,000 instruments in 84,000 shelter facilities. These supplement the 2100 presently equipped and 600 partially-equipped emergency operating centers.

"From the federal level down," Romm explained, "there is a sophisticated communications net. At the state and local level, there always seems to be more communications than anybody can handle. The problem is one of linking them together . . . so that they will be useful in an emergency."

Turning to the underlying assumptions of civil defense, Romm stressed three that in his opinion are "obvious, but ought to be restated for such a colloquium. First, a civil defense organization does not take over. There wouldn't be enough people to do it if it wanted to." On the other hand, he stressed the need to use existing government capability—the 2¼ million federal and 8 million state and local government employees. A second important assumption is that "the military does not take over, although there are detailed conceptual arrangements . . . being developed for military support of civil authority." Assumption three is that "an emergency organization gains experience in lesser emergencies, because the organization itself is exercised and because the hardware is given a workout." Organizations that are supposed to deal with a nuclear emergency derive experience from natural disasters, from civil defense tests and from exercises in emergency simulation training.

In summary, Romm postulated that a civil defense structure operating in an emergency "is really all of government operating in an emergency. In effect, the operating organization is in dual-use: it operates in peacetime emergency as well as a wartime emergency. I think it has demonstrated that under stress it does work."

Office of Emergency Planning

Reducing the destructive potential of natural disasters was the theme sounded by Ralph Burns of the Santa Rosa, California, Office of Emergency Planning (OEP). "Disaster itself may be unavoidable," he remarked, "but within our power is the capability to reduce the effects of disaster, to reduce the loss of lives, and to reduce hardship and suffering . . . The knowledge that one life may be saved by advance planning makes the planning worthwhile."

Addressing the representatives of state and local government in the audience, he jested, "the federal government makes no claim to the disasters you have. The responsibility for disaster protection or recovery lies with state and local governments . . . Congress said so." But in a more serious vein, he recalled that Public Law 875 can assist them, by means of direct grants from the federal government, "in restoring the basic services that it is your responsibility to put back into operation."

The law also provides for "continuing and orderly assistance" to state and local governments "in carry-

ing out their responsibilities to alleviate suffering and damage resulting from major disasters." In this respect, Burns suggested that "it is our (OEP's) place to assist the local authorities in their planning."

Experience shows "there are certain general considerations to be applied to every emergency plan. In natural disasters, the greatest number of problems seem to occur in the following categories: streets and bridges, debris removal, sewage disposal and sanitary works, water supply, public buildings, levees and storm drainage works, and light, power and gas systems."

Using a bridge for illustration, he threw his listeners some provocative questions: "What happens if the bridge goes out? . . . Are there adequate fire, water, and power systems as well as rescue and police services on both sides? What about traffic? . . . Do you have an emergency traffic plan developed so that traffic can be re-routed from any blocked streets early enough to avoid serious traffic tie-ups? What temporary crossing will be erected? What are the materials available, who will construct it? Will vital communications or power lines be severed if the bridge collapses? When debris starts piling up at the bridge, do you have equipment that can go in there and start pulling it out?

"These are the little parts of planning and training that I think can be simulated," he continued. Commending the simulation idea, he observed that in local government, especially, officials change, sometimes every few years. "They have to be retrained. They have to be reoriented to what their responsibilities are in disaster."

Foremost among the lessons to be learned from hundreds of disasters, he declared, "is the fact that 'it can happen here.' Each disaster reemphasizes that there is no substitute for a carefully conceived operation plan: that there is no substitute for thorough training in emergency skills and techniques and for periodic trials of disaster operations; and that there is no substitute for our accepting, as individual citizens and as representatives of government, our responsibility to be ready when disaster strikes."

Canadian Civil Emergency Planning

"In Canada," according to C.R. Patterson, Director General of our northern neighbor's Canada Emergency Measures Organization, "the whole civil defense or emergency planning posture is what you might call low key. Canada, from the point of view of floods and tornados and so on, is very quiet. The population is stretched across the country's most temperate and productive area in a thin line. So we can have many floods, landslides and other disasters that have no effect at all on our people."

The principal area of disaster control, then, is devoted to civil defense. "We have a protective umbrella, of course, afforded by the defense system of the United States. However, we are right next door, so even if we should not be at war when America is, there will be fallout danger. We have to plan, then, for anything that might happen to you as well as anything that might happen to us."

This planning, Patterson said, has resulted in a multi-faceted, proto-American civil defense system. "An emergency broadcasting plan, involving all radio and television stations, is operational. Key transmitters in the system are protected against fallout and have standby power facilities. A survey of all large buildings in Canada, to determine what fallout protection could be made available through their use, is under way, and the federal government has accumulated over $21 million in medical supplies and equipment at various locations across the country.

"Then, too, we have made provisions for the maintenance of government under nuclear war conditions at all levels. We have established a network of emergency government headquarters, from federal down to municipal levels, tied together by a comprehensive communications system."

The two major keys to the effectiveness of Canadian civil emergency planning, Patterson identified as "the assumption by municipal, provincial and federal employees of the responsibility for emergency planning as an extension of their peacetime responsibilities" and secondly, "the work and enthusiasm of thousands of volunteers."

Division of Health Mobilization

The United States Public Health Service's Division of Health Mobilization is selling the concept of "survival—not disaster," according to its deputy director, Dr. Robert Price.

Conceding that the campaign to focus public attention on the consequences of nuclear attack succeeded rather too well, in that many people rejected the prospect as "too horrible to contemplate," Price emphasized that the Division of Health Mobilization operates on the assumption that even in the event of mass attack, there will still be millions of survivors. Consequently, its programs are designed to "relieve as much pain and suffering as possible and to provide as high a quality of survival for the victims as is feasible."

An important aspect of the division's plan is the program to stockpile essential supplies and equipment. Most of the emergency medical stockpile is contained in Packaged Disaster Hospitals. These, as Price explained, are 200-bed units packed for long-term storage and designed to permit

(1) a community hospital to expand its operations to care for large numbers of disaster victims, or
(2) a subsidiary hospital to be set up in another building if the community hospital building is damaged or too small to accept the added numbers of patients.

(Continued on page 16) **S.D.C. SYMPOSIUM**

EXERCISE "SHAKEDOWN"

Exercise "Shakedown," simulating a massive nuclear attack on key Canadian cities, was conducted last November by The Bell Telephone Company of Canada.

The purpose of the exercise was to test plans, procedures and other systems developed by The Bell to ensure continuity of essential communications under any disaster—ranging from floods and hurricanes to nuclear attacks. Exercise personnel were required to assess damage to the company's buildings, vehicles, employees and services, and to restore service as efficiently as possible in accordance with predetermined priorities.

Conscious of its responsibilities for continuity of essential communications, Bell Canada has been actively engaged since the early 1950's in developing special plans for meeting any possible emergencies. The Company takes all reasonable measures to secure its installations which might be essential for defence and national survival.

The formulation and implementation of Bell Canada's emergency programs is the responsibility of an Emergency Operations Planning (EOP) Committee. To ensure the effectiveness of its plan, the EOP committee has based them upon existing organization, plant and operating procedures—so that they are readily understood by all employees under the stress of any crisis. Some of these measures are:

—network protection by diversifying communications routes between important centres within Canada and those linking Canada with the United States;

—construction of networks to by-pass potential target areas;

—setting-up of broadband restoration centres for restoring communications destroyed by war-time or natural disasters;

—maintenance of stand-by facilities such as portable repeater huts, portable radio relay stations, etc.;

—equipping important switching offices with semi-automatic line-load control devices, so that in any emergency telephone lines are not jammed by non-essential calls;

—building protected work locations—of the 54 planned 12 have already been completed; and remaining 42 are scheduled to be ready by the end of 1969. Moreover, it is the Company's policy to provide special protection features, in the design of new buildings.

—establishment of executive relocation centres, protection of essential records, and provision of emergency fuel supplies.

Emergency operator locations and special routing points are being set up to provide toll telephone facilities for essential users in metropolitan areas, where such facilities are more likely to be destroyed. Locations for serving Ottawa have already been completed, and those for Quebec, Hamilton, London, Windsor, Montreal and Toronto will be completed by the end of 1968.

An important part of the Company's program has been the construction of three Emergency Operations Centres (EOCs) at Smiths Falls, Barrie and Sherbrooke. These locations are designed to serve as the nerve centres for all communications, within areas served by Bell, under any conditions of natural or war-time disasters. As Smiths Falls is already the Trans-Canada Status Centre, it will continue to perform these functions during any emergency. All the centres provide emergency living quarters for operating personnel, and will be stocked with adequate food supplies.

These centres served as the command posts for Exercise "Shakedown," which was witnessed by representatives of the federal and regional emergency measures organizations, department of national defence, and the federal emergency national telecommunications organization. The exercise began with the issue of a "general alert" to all personnel of the emergency operations centres on the evening of November 2. Activation of the Bell Canada emergency communications network was accomplished within 18 minutes. Reports of "nuclear attacks" on Ottawa, Montreal, Toronto and 12 other centres located in areas served by Bell Canada, began arriving the next morning at 0800 hours.

Through the use of records, maps, charts, etc., special damage and restoration groups at the three centres speedily assessed the "Damage" to the Company in terms of buildings, vehicles, supplies, personnel and service, and recommended ways and means for "restoring" essential lines of communications as quickly as possible, under conditions of "radiation hazards".

One of the assumptions made during the exercise, held throughout the area served by the Company, was that 70 to 85 per cent of the off-duty personnel in target areas were no longer available for performing their tasks. The exercise personnel, including the directing staff, numbered about 90. In addition, there were about 50 observers at the three centres.

A total of about 850 messages were processed at the three centres by the time the exercise was completed at 1600 hours. Of the over five million telephones served by the Company, more than half were "lost". About 40 per cent of the total trunks, and 104 out of 155 special government circuits, had been "destroyed". However, personnel at emergency locations were able to restore enough channels to take care of all essential communications, including providing transmission facilities for a special "broadcast" by the Prime Min-

(Continued on inside back cover) **EXERCISE**

THE WORLD TODAY

by

John Gellner—Editor, Canadian Commentator

Previous editions of the Digest, December 1967, February 1968, published texts of addresses presented at the Canada Emergency Measures Seminar in September 1967. The following address by John Gellner concludes the series of articles.

It is difficult for us, who live in a well organized, peaceable and prosperous environment, to realize that the world beyond our gates is in the throes of general upheaval so powerful that it looks well-nigh uncontrollable. Yet this is the situation in the world today.

There are three main reasons why the majority among us do not see that the world is in a state of crisis:

- We are ill informed. This may seem a surprising statement considering the avalanche of information that descends upon us day after day. It is, however, not the quantity of information that is lacking, but its quality. We are getting a controlled and planned picture of the world surrounding us from many of the communication media, even some highly respected ones. The facts offered are almost always correct, but not the interpretation. If we are unable to make up the latter ourselves, we get a distorted view of what is happening abroad.
- There is a certain reticence among knowledgeable men to convey information. This is a continent of optimism, justified as far as our affairs are concerned, but not in regard to global affairs. The pessimist—in fact he is only a realist—is not appreciated.
- Man's capacity for self-deception is limitless. We are no slouches when it comes to forming an overly rosy picture of ourselves and of the trends and forces in the world.

The world crisis of our days is caused by the interplay of two global struggles which, for the sake of simplicity though perhaps somewhat imprecisely, we may call the West-East and the North-South struggles, respectively.

The West-East Struggle

There are two super-powers in the world today, in terms of actual forces, but even more of capacity for generating force, the United States and the Soviet Union. As has always been the case in history whenever there were two great rivals on the scene, there is a struggle for ascendancy, for regional, or in our days world, domination.

Such a struggle is undoubtedly going on between the United States and the Soviet Union. The Russians have at times been frank enough to admit that—Khrushchev, for instance, has said to the West, "We will bury you", and had obviously the United States in mind which alone really matters. Responsible American leaders have been less outspoken. Yet, as Walter Lippmann has so clearly pointed out in his "The Communist World and Ours", the fact is that *both* sides know in the depth of their hearts that in the long run they will not be able to tolerate one another—not as an equal, at any rate. One can only hope and pray that in the atomic age the struggle will be resolved by other means than military. The United States is by far the stronger of the two, economically, and consequently politically. Especially if it learned to manage its resources better than now when it is throwing them about with abandon, it could push the Soviet Union out of contention, relegate it to a second-rank role. As this would be in our best interest, we should do all that is in our power to help the United States to achieve that goal.

In the meantime, the struggle goes on. We should not be fooled by the present relaxation, the detente as it is called, and least of all by the policy of "peaceful co-existence" as propounded by the Soviet Union. It has been called "a parenthesis between two communist offensives", and this, no doubt, it is, except that one might substitute "Soviet" for "communist". The United States and the Soviet Union remain "two scorpions in a bottle", as J. Robert Oppenheimer once called them. And it is still true that they fight every inch of the way. "Both contestants are committed to power politics", says Ralph Lapp in his "Kill and Overkill", "and neither will yield an iota of its potential threat to the other". Even where the two colossi seem to be co-operating, as in the endeavour to obtain a non-proliferation treaty, they do so only to the extent it fortifies their positions in the main contest. Similarly, the very intensive participation of the two superpowers in the North-South struggle is above all intended to gain advantages that can be exploited in the global politico-economic battle that rages between them.

The North-South Struggle

This is basically the great mass of contests that evolve from the contradiction between richesses and poverty, between social and economic development and under-development, in the world. Just as the existence side by side of immense wealth and abject poverty in the industrialized countries was untenable in the long run, and had to be corrected by the income tax and the extensive social security legislation it made possible, so the division of the world between "haves" and "have-nots" is unacceptable to the latter. It just will not do that 20 million Canadians should have just about the same income as 500 million Indians, or, even more horrifying, that the yearly maintenance of a poodle in New York should cost more than that of an Indonesian family.

This appalling inequality is the principal reason for the revolutionary pressures in today's world. A number of circumstances contribute to it:

- Above all, there is very real want. Up to 1961, at least, total production of food in the world was greater than total requirement. If there was famine, it was because food was not properly distributed, not because it was not available. Since that year, however, requirements have outstripped supplies, and the situation grows worse as yearly food production increases by an average of one per cent, but population by an average of 1.7 per cent. Even worse, the rise in food production is generally least and the population increase greatest in the underdeveloped countries. As a result, whereas hunger was epidemic in various parts of the world until a few years ago, it is endemic now.
- At the same time, the most powerful compensating factor is now only rarely present, the acceptance of the religious teaching of Man's subordination to the will of God. Religion has flattened out everywhere in the world. People just do not accept meekly any longer the position "in which the good God has been pleased to place them", nor are they prepared to trade misery in this life against the faith in eternal rewards. By and large, people want their paradise here and now.
- Also, people everywhere now know how the other side lives. Even in mean African or Asian villages there is usually a loudspeaker on the square which blares out the news. And as these come from government-operated radio, they dwell on the luxury and hard-heartedness of the white man.
- As, in this over-populated world, industrialization is the only hope, and it, in turn, the product of western civilization, it is the latter which has superseded all others. In fact, it can be said that it is the only living civilization, all others being merely historical remainders and not "sum totals of all the achievements of a society". Thus an Indian politician may clothe himself in a dhoti and make a point of speaking only Hindi, but if he wants to help his people, he must spread the industrial, technological civilization of the West, not the traditional of his particular region of India. Unfortunately, the old order is invariably destroyed sooner than the new one is established. The result is that there are some outer trappings of western civilization, and the urgent demand for more, but little substance. The big city mobs of Africa and Asia, which are the bearers and the tools of revolution, are composed of individuals who have been released from the old tribal order, but not yet integrated into a new one.

The result of it all is the demand, in the greater part of the world, for social and economic change, immediate, revolutionary change. And as a turn for the better, from their point of view, can come only if wealth is taken from the privileged and given to the under-privileged, the hatred of the latter is turned against us. "We're the most hated people in the world today, and rightly so", wrote Donald G. Barnham. "Millions of people are dying and we can't do anything about it. Some people blame them for being interested in communism, but they're so low that any way is up".

Revolutionary tensions lead to warfare, guerilla wars against the powerful "haves", bitter fights for a crust of bread among the "have-nots". There have been at least 43 wars in the world since 1945, many of them very big, very bloody, and potentially very dangerous. The incidence of armed conflict is increasing. With it mounts the danger of a bigger conflagration. We better watch out, lest the storm reach our happy Shangri-La, as well.

What to Do

The recipe for resolving the North-South struggle seems simple: Level out society the world over, just as we have levelled out society at home. Pope Paul put it this way in last year's encyclical, "Populorum Progressio": "The world is sick. The poor nations remain poor while the rich ones become still richer. The very life of poor nations, civil peace in the developing countries, and world peace itself are at stake . . . The superfluous wealth of rich countries should be placed at the service of poor nations . . . Otherwise the continued greed of the rich nations will certainly call down upon them the judgment of God and the wrath of the poor, with consequences no one can foretell".

"Put the superfluous wealth of the rich countries at the service of the poor" . . . that is a simple recipe, all right, applied in the industrialized countries when the income tax was introduced in the beginning of this cen-

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THE SKOPLJE EARTHQUAKE

by

Branko Pavlovic

The following article was published in the Yugoslav Press and translated from Serbo-Croat.

Experiences gained—a great school for the future

The decisions made, the measures taken and the action performed up to now, the willingness and solidarity of all the peoples of Yugoslavia, as of the whole world, in helping the unfortunate town, as well as the way in which that help was sent, all together may be considered as an example of well organised and effective action and as an example of how action must be taken in local, national and international spheres in the face of a disaster of this kind. And so, the impressions of all observers, both internal and foreign, who were on the spot to acquaint themselves with the magnitude of the disaster and the way in which harmful results were prevented, were most favourable. For this reason the Skoplje disaster has become a unique, great school not only for us, for our whole country, but also for other nations. The experiences gained in Skoplje are of great value for many sectors of public and social activity. For this reason they are worthy of becoming the object of careful study and analysis.

These experiences, seen from the point of view of civil defence, or, rather in relation to the question "was Skoplje prepared for the disaster?" have already given answers to many disputed and complex questions and have shown what in future must be done so that victims and damage from such and similar disasters may be reduced and the after-effects largely averted. We shall take this opportunity of surveying some of the questions and problems which have arisen in this connection.

The attitude to such and similar dangers must change

The disaster in Skoplje, above all, has pointed to the fact that the vagaries of the elements on the whole have been thoroughly recognised by the authorities and estimated as potential dangers. And so, the question has been put: "Will it be the same in the future?". Will lives and property of citizens, particularly that which is being built anew, be further subjected to the fatal elements, or must the position which has existed up to now in that respect change totally and basically?". That our country, on the whole, represents the part of Europe most sensitive to earthquakes, that especially Skoplje, Dubrovnik, Zagreb, Zadar, Rijeka and a whole series of other towns and villages are in such a sensitive earthquake area, was known before this great national catastrophe. At the same time, these circumstances were not sufficiently recognised and therefore the measures which should have been taken in this state of affairs were nowhere, in the whole country, adequate. The only exception in this respect is, at least to some extent though not fully, the republic of Slovenia. She alone recently (on 13th July this year) took appropriate measures relating to the construction of new building projects in the areas of that republic most sensitive to earthquakes. Besides this, she has reached further achievements in the realms both of organisation and of the equipment of fire-brigades and the services for rescue in special circumstances (the rescue corps) in avalanches and snow-storms, in disasters in the mountains, in serious traffic accidents and so on. Such an attitude towards the various accidents and catastrophes which may occur is positive and desirable. At the same time, whatever is said, not even in Slovenia has this problem been thoroughly examined, nor, have the necessary steps been taken which would correspond to present possibilities. For example, considerable references have been made to the accident at the nuclear reactor which two years ago took place at the Jozef Stefan Institute. This disaster, which moreover required very speedy intervention, was met with complete lack of preparation. Harmful results were avoided, in spite of great delay, only after the arrival of a specialised team from Belgrade. Also, there are other problems, particularly that important and vital problem of defences and preparations in time of war to which even in that republic the appropriate measures had not been undertaken or realised. Thus it has been up to now. At the same time, the example of Skoplje—an example of a far too drastic and costly warning and lesson—gives us hope that in future it will not be thus. Among the decisions which have been made about the reconstruction of Skoplje, there is one which envisages that Skoplje will be erected in the same place and that the new construction will be able to resist further instances of disasters of this kind. This decision is very important and it may be said that it indicates a turning point in the position and attitude which up to

now we have had towards disasters of this kind. But in connection with that the question is posed, whether with this decision all the burning problems of civil defence have been settled, that is all problems of defence against possible further disasters even in case of war. Certainly not. We are still far from having done and changed all that is necessary. Above all, measures must be taken not only in Skoplje but in all other regions which are sensitive to this danger, and according to the seismological map, more than half the area of our country falls into that category. At the same time, all that is possible must be undertaken and carried out in good time against not only earthquakes but against other dangers. And so, regarding broadly all the dangers to which an area may be prone, or rather all measures which belong to the field of activity of civil defence, let us turn again to the example of Skoplje and let us try to answer the question as to what in that respect has been undertaken and what is yet to be undertaken.

A plan for the defence of the City did not exist

Skoplje, as has been recognised, is not only sensitive to earthquakes, but is also subject to floods, and, beside that, there continually hangs over it, like the sword of Damocles, the danger of the possible destruction of the hydrosystem on the river Tresk, which is situated in its direct vicinity. An enormous mass of water could rush down onto Skoplje in a very short space of time, and if that happened at the same time as the Vardar and Lepenac reached their maximum level, it can be imagined to what a disaster this might lead. When we add to these dangers the danger of fire and enemy action in case of war, to which every other town in our land could be subjected, it is clear that the Skoplje area represents an extremely sensitive spot and that in connection with this it was necessary to take the appropriate measures.

The first thing that should have been done was to make a general plan of defence of the city based on study and analysis: of geographic, geological, seismological and meteorological conditions and circumstances, then of dangers from fire, various forms of explosion and destruction, contamination and poisoning of water, air and soil, which may result from industrial and other projects or from enemy action, as well as analysis of the material and atomic sources of power which may be affected. Skoplje did not have such a plan, but it is necessary to bring about a greater, more powerful form and degree of defence, so that those make-shift, improvised and incomplete decisions may be avoided, to which we have been brought through having no general plan of defence. Such a plan is actually being worked out at present. It would be an unforgivable mistake if in the foundation and construction of the new Skoplje questions of civil defence were not settled. Within the framework of such a complete solution of the problem (which as we have seen did not exist in Skoplje), among the measures which must be taken there exist first and foremost the so-called preventive measures. What has been realised in this respect at Skoplje?

Did Skoplje have the necessary green spaces and other open areas which would have served as a defence for the hindrance of raging fires and the proper free space for the immediate resettling of the population and the necessary mechanised equipment to be used only for civil defence in a case of disaster? Was the width of the streets in such proportion to the height of the buildings as would have prevented them being overcrowded? Was the question of the architecture of the whole town considered from the point of view of civil defence, that is, in view of the continual danger, was the question decided in advance whether it was necessary to have mainly high buildings or low buildings or a compromise?

Was the question of the necessary reserves of water in case of great fires and enemy action resolved by means of various reservoirs, hydrants, wells, basins, fountains, pumping stations and access to the Vardar and other sources? And had the existing and planned reserves of water been proportionately disposed over the territory of the town in relation to the sensitivity and the water requirements of the separate parts of the city? Was the number of supply points for various types of accident (fire, explosion, cuts in supplies of water, gas and other materials etc) disposed in the most advantageous way and had their location been satisfactorily settled? Had the question of shelters been made an integral part of the town plan and had the possibility been considered, from that point of view, of the construction of underground projects? And had other basic problems and measures of civil defence been considered and given their proper place in the town planning of Skoplje? No. There were not all of these measures, which are the essence of preventive action, and which should have been completed and worked out in the town plans of Skoplje. And how incomplete they were may be seen from only a partial examination of them and the situation in Skoplje. Here are some details:

Although the percentage of damaged buildings and buildings which cannot be used is very high, the number of completely destroyed buildings is by comparison very low. But even that number of complete ruins which is so surprising in relation to the magnitude of the disaster, has shown, after they have been tidied up, that some streets were too narrow in relation to the height of the buildings (and it can be imagined what the situation would be like in the case of bombing). Also, the temporary resettlement of the city's inhabitants in parks has shown that there should be more green spaces and open areas in Skoplje. Also, it is a fact that the question of constructing high or low

buildings has not been viewed from the point of view of defence, which is underlined by the existing diverse appearance of the city's architecture. It is clear that the general tendency of town planning was towards high buildings, which is, moreover, the general tendency everywhere, even in the smallest towns. The building of skyscrapers at all cost everywhere has become the fashion. However, what has, quite apart from town planning, caused a large number of low buildings to be built in Skoplje, is the type of terrain, the wild situation and the various other circumstances in which Skoplje was founded and has continued to be built. Thus, the question has been opened again, and the perils to which Skoplje may be exposed make it imperative that this problem—whether to go in for high buildings, low buildings or a compromise—be definitely settled.

It can be seen that the question of the reserves of water, which may be demanded in exceptional circumstances in a populated area, was not considered, from the fact that after the catastrophe Skoplje had not even the smallest reserves of reliably healthy water for drinking. The way in which this problem was resolved—by bringing water from outside Skoplje—is first of all very expensive, and, apart from that, this solution could only be applied because the whole country came to the aid of Skoplje. The great number of motor-tankers as well as a great quantity of mineral-water in bottles were put at Skoplje's disposal. But if one thinks of a state of war, this problem could not be solved in this way, a problem not only of drinking water but of water for all purposes, the need of which in great quantities will be felt at every stage.

As regards the present displacement of hydrants and reservoirs of various emergency services, the fact that they do not represent the best solution and that insufficient account has been taken of this, is not peculiar to Skoplje but is more or less the general position in the whole country. In the main, economic and all kinds of other factors, (but only to a lesser degree the defence and security of the population and of property) have influenced the disposition of such installations. It is the same with shelters and other questions of civil defence. All these questions, which are basic elements of general urban development of an inhabited area, have not received the appropriate answers in Skoplje either. Thus it was in the old Skoplje, but town planning in the new Skoplje must solve these problems and give them a place of priority. And for that the conditions now are most advantageous. Now, for example, there is the opportunity of building underground garages, shops, cinemas, bars etc., thereby also solving in part the question of shelters and similar other defence measures. Before any new urban plans for Skoplje are adopted, there must first be a preliminary examination of the proposals of various study groups on the different aspects of defence, which are: constructional, fire-preventive, R.B.H. defence and so on.

To what extent were present services able to act successfully?

It is recognised that the problems of the defence of a centre of population are not all worked out solely by preventive measures, even though these measures must, in any case, always be afforded priority, since by them great loss of life and damage may be minimised. However comprehensive and modern they may be, in view of the nature of modern dangers, they are always far from what would correspond to a full and ideal defence system. Such a system does not exist; there is no question of considering the possibility of an absolute degree of defence anywhere in the world—it would be unrealistic. Instead, according to modern concepts of civil defence, it is necessary to provide a well organised and equipped service of first aid and rescue, to supplement the preventive measures and to be regarded as a task to be solved simultaneously with them.

The necessity of the existence of such services is so obvious today that one could not imagine a centre of population or even any area in which people live and work without them. Consequently, like other cities and large towns in our land Skoplje had such services. The question poses itself, whether the problem had thereby been resolved, or rather whether the existing services in Skoplje were well organised and so directed and equipped with personnel and technical aids that at a given moment it could perform what was expected of it. So let us examine what the experience of Skoplje has told us and to what important facts and circumstances our attention is turned.

The state of affairs with the communications services must never be repeated

The situation in which Skoplje found itself as regards communications after the disaster was very difficult and unfavourable. All communications had been interrupted and the city was completely unprepared and unable by its own resources to find a way out of the current situation. The first contact was only established by the help of units of the army, and that only with an inadmissable delay for such contingencies. Other interrupted communications were brought back to a satisfactory state only several days after the disaster, while communications between the headquarters and the rescue units were maintained by means of couriers. Such a position in respect of communications, in its effect on organisation and application of rescue services, had from the start a paralysing effect and caused delay, hindered and diminished the effectiveness of the application of first aid and rescue operations, because it is obvious that for help obtained from the nation to be most effective, the first news of the disaster should not arrive with such delay and the latest information on the character and mag-

nitude of the disaster should be exact. Also, it is obvious that the rescue action itself, where in the majority of cases not hours or days, but minutes and seconds decide whether lives in danger will be saved or not, would take place with far greater success if between the units and the headquarters there existed dependable and modern radio contact. Besides that, it should be admitted that apart from the efforts made and help from the nation, the position regarding communications in Skoplje was unsatisfactory, or rather that in a situation where it was necessary to react extraordinarily quickly, the time factor was not fully taken into consideration. And what an inadmissibly unsatisfactory state of affairs that situation presented becomes more obvious if one compares with the experience of Skoplje other situations where the decisive nature of the time factor was more clearly realised, for example, in situations where there existed the possibility of preventing danger (by an alarm being given) or after enemy action. For this reason the communications and alarm services are considered the basic and most important services of civil defence. This is service number one, which must be so organised and equipped that its functioning will not be in doubt under any circumstances or at any moment, and the functioning of such services, i.e. of the communications and alarm services, is not difficult to realise. It may be easily brought about by means of modern tele-communication equipment which is easily available and in relatively plentiful supply.

Besides, the first measure which must be taken as a result of the lessons from the experience gained in respect of organisation and training of the rescue services, is the establishment of a special system of communications and alarms which are to be brought into action only in exceptional circumstances.

The experiences of Skoplje have shown in particular how important are permanent, well-organised information services. After Makarska, Skoplje is the first example in which it can be seen most clearly that rescue operations cannot be carried out in a well-organised, well-planned and rational way nor can precise information be given to interested parties and to the public concerning persons killed, wounded, evacuated or rescued, without permanent information centres being provided with the necessary equipment and staff specially trained for that purpose. There is no need for those centres in normal circumstances, but they must in future be planned and set up for happenings of this kind and especially for the contingencies of war.

Disinfection of the area

As well as an information service, a service for dealing with the disinfection of the area is one of the most important services which must operated in case of war or other great disaster. That has been well recognised after the great disasters which we have suffered over the past years but the question has somehow always been passed over carelessly. It appeared that there were no special problems in this respect—it was only necessary at a given moment to mobilise a sufficient number of citizens to dig communal graves and bury the bodies. Then everything would be in order. At the same time the example of Skoplje has indicated that the question is not quite so simple and easy.

Above all it was shown that considerable difficulty occurred in mobilising the necessary personnel for that purpose and that there were a number of cases where corpses began to deteriorate and to stink. Moreover, it came to notice that for that purpose too there are required special equipment and training to prevent infection and to protect the health of those who carry out that work. Also, especial difficulties presented themselves on the question of identification. The existing criminal investigation services of the city of Skoplje, even if they had not been scattered and paralysed by this huge disaster, would have been inadequate to carry out in such a short space of time this mass identification process, which was necessary. Thanks to the help of the criminal investigation services of Belgrade, however, that work was relatively successfully carried out, but there still remain approximately 100 unidentified cases. This means that in relation to this question too the necessary measures must be planned and determined beforehand so that the task of disinfecting the land at the time may be carried out completely and expeditiously by means of one's own resources, since in war time, for example, no help from the rest of the country can be expected.

Special Food and Relief Services

As in the case of the services mentioned (information and disinfection services) indistinct concepts and conflicting thoughts, or, rather insufficiency of knowledge existed concerning the question of the so-called special services for good and relief of the threatened area. The task of these services, as is known, consists in arranging in the initial stage of exceptional circumstances (which may be only hours or, at the most, days) food and other necessary supplies for the area as well as to ensure the unhindered activity of civil service units. To that purpose those services must for a specified short time (usually a few days) arrange reserves of fuel, the necessities of life and other requirements for the continued activity of civil defence forces as well as protecting reserves of food and drinking water from contamination by means of RBH agents and other means (tents, covers etc) for the temporary requirements of the populated area. Besides that, they must organise and equip the requisite number of specialist units which will undertake the supply of warm meals and care for the accommodation of the imperilled population. These services

will continue to function until the state of disorder has been at least partly normalised, that is until the administration, and business and other organisations have taken back onto themselves responsibility for such matters. At the same time, apart from such clear and precise tasks, these services have been in an ambiguous position. The idea has been predominant that they are to no purpose, because there already exist bodies and organisations whose duty it is to take care of this question. That this is not true can best be seen from the example of Skoplje. When the purity of the the drinking water came in question (and in other circumstances it would be the same case with food supplies), when it was necessary to prepare food for the populace and for rescue units in field kitchens, when it was necessary to accommodate an entire city with tents and suchlike, then it was shown that the existing catering and other business undertakings as well as communal and other services were unable to undertake these tasks. Thanks to outside help particularly from the army, which immediately came to assist with its organisation and equipment, these questions were solved in a satisfactory manner. But, as has been mentioned above, one cannot rely on outside help. There is only little prospect—possibly no prospect at all—of obtaining such help in time of war, because then everyone will be occupied with his war duties and problems.

Order and Security

The disaster in Skoplje, apart from everything else, has shown that in such and similar circumstances all existing organisations both administrative and others including the most strongly organised bodies of the internal administration, may be disrupted and made incapable of normal operation. Besides that, it has shown that in such circumstances the services for preserving order and security must be strengthened in many ways in comparison with normal conditions. The unprotected personal property, which everywhere was within easy reach, attracted persons inclined towards criminality and also attracted known criminals not only from Skoplje but also from other towns. The prohibition on approaching buildings in danger of collapsing, and ruins where rescue units were working as well as banks and other buildings, the prohibition on movement during the night and other measures which were taken to preserve order and security, showed that for such numerous tasks the existing units of People's Militia were far from being sufficient, which means that for this purpose it is necessary to plan in advance, to train and equip special units which would be mobilised in case of need. Skoplje had no such units, and the fact that this task of the preservation of order and security was accomplished nevertheless, is due principally to the help given by units of the army as well as supplementary forces of the People's Militia from other towns, which similarly cannot be depended upon in other situations.

How the Main Task was Performed—the Rescue of the Victims

It has already been related how immediately after units of the army, technical units of civil defence went to the work of clearing spaces and rescuing the buried population, and municipal bodies as well as many private persons were mechanised. Thanks to the devotion of these units and persons, as well as to their relatively rapid intervention immediately after the disaster, the number of victims did not reach the proportions which would otherwise have occurred in a catastrophe of this size. But even that number would have been considerably smaller if the existing rescue services in the city of Skoplje had been better equipped and trained.

Just as in the time of flooding, when the civil defence units had not a single rubber boat, so it was here where technical civil defence units went out to their places of work either unequipped or only with spades and shovels. They were only technical in name, so that when it came to moving and breaking up concrete slabs, sawing through bolts and hollowing out passage ways, they were helpless or else their action was completed too slowly. The position with the units of the army was similar because they did not have the appropriate equipment.

Apart from lack of technical preparation, both civil defence and military units lacked the necessary expert training. It is necessary to throw only a cursory glance at their work to perceive immediately that they were not prepared for such and similar work. The same was the case with the municipal vehicles due to the non-existence of proper technical equipment to carry out repairs. The people in charge of what there was did not know in what way to use it to the best effect. After such action, which at first was slow and ineffective, an apparent improvement in the rescue action occurred but only from the time when teams of miners and other similar teams with the appropriate equipment appeared on the scene.

The example of Skoplje has shown better than ever the necessity of the existence of well trained and equipped, not only technical but other specialised units of civil defence, among which will be especially emphasised so-called civil defence brigades located outside the threatened area and which will come into action only if local forces of civil defence (sections and units of self defence) have been destroyed or disrupted.

This is a rough estimate of the needs and circumstances in Skoplje after the great disaster and we consider it sufficient to show the full extent of the problem of civil defence as well as the necessity of

taking immediate precautions so that in similar situations huge numbers of victims and material losses may be prevented or brought down to a minimum, and especially the necessity of the existence of a well organised and equipped civil defence service. The extent to which this necessity is felt can best be seen through the example of the thoughts of our eminent writer Dobrica Cosic, who is far from being an expert on civil defence, but who, like all citizens of our land, sympathises with the suffering city, and feels the need of the existence of something which we have not yet got, so that in the future we should not meet similar disasters and catastrophes in such an unprepared state. Feeling the assistance of units of the army as having been the most successful and best organised, comrade Cosic says in this context: "Wearied by the national apathetic and traditionalist attitude to the forces, it is as if we did not understand the long term implications of something which is coming about in our society and of which we are not very sure. The time is coming when armies will be required by nations not to fight and defend their freedom but to be guardians against great disasters, against all the fury of heaven and earth, to be a shield against flood, fire, storm and earthquake, to save the people in all great disasters and misfortunes. In this sense, humanity really has no reason fully to deprive itself of its armies. But they must change radically the structure, means of armament and training methods". Yes, exactly, such armies, apart from the armed forces, exist in many lands of the world under the name of civil defence and they will exist when those other armies with weapons of war have ceased to exist. ▲

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tury, and proved successful. There is, of course, not the slightest chance at present that it will be resorted to as between nations. On the contrary: Year after year, we retain more "superfluous" wealth, and give proportionately less to the underdeveloped countries—proportionately in relation to our ever mounting standard of living. Thus, in the past five years which saw an unprecedented boom in the developed world, foreign aid has remained more or less constant—Canada has given a little more, but the United States a little less, and so the world over, so that the end sum has remained at about six billion dollars, or so, yearly. This is a drop in the bucket, and would be even if every dollar were honestly and wisely used for the benefit of the peoples of the underdeveloped countries. After all, with about two billion under-privileged in the world, the injection has amounted to less than one cent per capita a day. What will this buy? What will this build?

Still, there are some urgent tasks which will have to be undertaken by the developed countries at once, as a matter of utmost urgency. The most important is to guard against widespread famine in the world. This is largely a matter of providing a sufficiency of fresh water for irrigation. Unfortunately, the five-sevenths of the earth's surface which are water are unusable in this respect—unusable, unless desalinization is resorted to. This appears to be within our technical capabilities, even on the necessary large scale, but would of course be very costly. It must be done, though, or something which will produce the same result (if there is anything else). Food production simply has to be raised dramatically in the food-deficient countries, even if we had to accept some decrease in our standard of living to bring it about. Self-interest, if not humanity, dictates that we should bring this sacrifice.

Even this, of course, will not take the wind out of the sails of world revolution, but it may at least make it slacken. The North-South struggle is going to go on until some way is found to give an acceptable life to all the world's inhabitants. For the next years, at any rate, tensions are bound to increase as dire want mounts, without the palliative measures that may be devised being in effect yet. And, as pointed out earlier, the West-East struggle, too, will be exacerbated by the general revolutionary climate that is prevalent in the world.

So, we live in difficult times, and we are undoubtedly in for even rougher. There is no point concealing from oneself the seriousness of the situation. Nor is it possible to remain uncommitted. With our own future at stake, we must want the West to prevail in the West-East struggle, and the North to come out unscathed of the North-South conflict. Unfortunately, there are not yet enough people among us who realize that neither will happen without the expenditure of great effort and the making of big sacrifices.▲

HUMAN BEHAVIOUR IN DISASTER

In February, 1967 the EMO National Digest published an address "The Management of Human Behaviour" by Dr. Horace Beach of Dalhousie University. This article was the subject of an editorial in a recent edition of the Lancet. It is herewith republished with kind permission of the Lancet.

How much time and effort should be spent on preparing for something that may never happen—earthquakes, for instance, or floods, or cyclones, or giant explosions? Holland has an elaborate system to cope with floods; and, in Sweden and the Soviet Union, training for civil emergencies is compulsory for young and old. But the practicability of a constant state of alertness to every imaginable form of disaster is another thing. In a manual prepared for the Canadian Department of National Health and Welfare,* Prof. Horace D. Beach of Dalhousie University concedes that for the general population to live in these circumstances is neither desirable nor necessary. But he believes that a nucleus (10% is tentatively suggested) properly trained to go into action in crises of this kind is both practicable and desirable. Disaster is an extreme emergency; "an emergency, prepared for, ceases to be an emergency".

But where do we begin? How do people behave when society is disrupted? On December 6, 1917, 225 tons of high explosives in a ship blew up in the harbour of Halifax, the capital of Nova Scotia. 2,000 people out of a population of 50,000 were killed, 16,000 were injured, 200 were blinded, and 10,000 were rendered homeless. The explosion created a tidal wave which drowned nearly 200 people. "To add to the catastrophe, freezing rain, thunderstorms, blizzards, and seventeen inches of snow descended on the prostrate city in the four days following the explosion." In 1917 this was the greatest recorded explosion in history.

But Halifax survived, the behaviour of its citizens on the whole was admirable, and few of the survivors later manifested signs of psychological damage. Greater disasters since then have confirmed the resilience of human beings to overwhelming catastrophe.

The prime need, as Professor Beach and his collaborators see it, is anticipatory planning of communications, coordination, and control, and the establishment of a recognised authority. A common information centre should handle all information going to and from the disaster area. Direct personal contacts, runners, and the simpler communication of messages (such as were used by civil-defence authorities in the U.K. during the 1939-45 war) may be all that is feasible at first. Later, helicopters, light planes, squad cars, and motor bicycles may come into the picture.

Lack of communication and lack of a clear division of authority and responsibilities can bring about the bizarre kind of situation in which, after a hurricane in Louisiana, the newly appointed civil-defence administration for a parish did not know that the State defence officials were working in an office in the same building. The Red Cross decided that few emergency beds would be needed, and set up 150 beds. Two other organizations also set up 150 beds each. In the end, only 20 of the 450 emergency beds were occupied: the homeless had been taken in by friends and relations. In another case, the mayor of an adjoining town asked the radio station to appeal for blood at about the same time that a Red Cross volunteer made a similar appeal. 2,000 people descended on the hospital to give their blood, although the hospital needed no blood.

The establishment of a single hierarchy of authority with well-demarcated divisions of responsibility to control the movement of people and materials is clearly desirable. Whether authority should be exercised by elected officials or by outside authorities, such as the Red Cross, is only one of the many elements of an immense problem. But, however the authority is constituted, the essential thing is that the general population must know where authority resides before calamity descends. Outrageous though it may seem there have been occasions when rival organizations have placed prestige and the desire for publicity above the urgent needs of the moment.

Civil-defence planners are familiar with the difficulties of feeding and sheltering victims and guarding against the dangers to public health, but the Canadian manual, refreshingly free from uncomprehensible jargon and highly readable, should be especially valuable to them in dispelling many of the commonly held misconceptions of the behaviour of the victims of disaster. Thus, we are told, mass panic is uncommon, except when danger is increasing and escape routes are blocked; looting is more likely to be indulged in by outsiders converging on the scene of disaster, sexual licence, aggression, and other forms of anti-social behaviour are inhibited by shock and the urgency immediate problems; people are not dazed and helpless, and they help themselves; emergency transport, feeding, and care of the injured are established fairly rapidly; for a time at any rate, individual and selfish needs are sublimated in the general need; emotional

* Management of Human Behaviour In Disaster. Department of National Health and Welfare, Ottawa, Canada. 1967.

and physical reaction tends to be temporary, and there is no clear evidence that disaster increases neuroses, psychoses, and other kinds of mental illness; children, if they are not separated from their parents, form no special problem. In short, under stress, people can endure more hardship, deprivation, under-nourishment, and shock than is commonly believed.

But reserves of human endurance and resourcefulness are not enough. In developed countries with abundant resources, the aftermath of natural and man-made disasters can be mitigated. The situation is different in poorer and more isolated countries. Some years ago, after the earthquake at Agadir in Morocco, the suggestion was advanced that a world emergency service, ready to move at speed to a disaster area anywhere in the world, should be established under the auspices of the United Nations. This, like many other blessings to come, is in the present-day world a visionary project. But it should not preclude the setting-up, where feasible, of skeletal organizations which, the Canadian authorities believe, do not entail a vast expenditure of money and materials. ▲

FEDERAL (*Continued from page 1*)

programs will be set aside during the fiscal year 1968/69.

(2) While reductions in expenditures are essential, we must ensure that no major system, such as emergency operating centres, etc., is dismantled or closed down past the point where it can be readily reinstated when the necessity demands.

(3) Emergency planning is to be considered an everyday part of government activity and not something that is carried on extraneously to the normal departmental planning.

(4) Activity at the Canadian Emergency Measures College will be limited to the training and exercising of a basic number of officials, professionals, technical experts, etc., required to maintain the modified program.

(5) All plans will be developed with the intent of expanding them rapidly should a crisis threaten.

(6) Great stress will be laid upon an up-to-date, effective public information system using all media, in case of necessity, for the immediate and effective instruction of the public concerning emergency activities that should be engaged in by individuals for their own protection.

(7) Expenditures in civil emergency measures shall be effectively balanced between staff and administrative costs and continuing operational capability.

(8) The total federally-funded program shall be designed to prepare for a war emergency but, nevertheless, may be utilized as and when required if a peacetime emergency situation so demands. ▲

S.D.C. SYMPOSIUM (*Continued from page 5*)

To increase the operational capability of community hospitals to a minimum of 30 days, the division is developing Hospital Reserve Disaster Units. These units, which contain critical medical items needed for disaster care, are placed directly on the shelves of community hospitals for immediate availability in a disaster.

Estimates of expected casualties, surviving health manpower and vulnerability of present communtty hospitals make it possible, Price said, to "distribute Packaged Disaster Hospitals and Hospital Reserve Disaster Inventories in accord with the estimated casualty load; to pre-position these back-up supplies with high probability that they will not be destroyed by enemy attack; and to provide for operational capability by working with the administrator and staffs of participating hospitals." These capabilities he termed "the foundation for a sound, continuing program for health services in a national emergency."

Since major population centers will have a high vulnerability, medical planning must take into account the possible destruction of many hospital beds now in the core city. Therefore, "hospitals in communities as far away as 100 miles must be prepared to expand their own facilities." By developing a workable plan for utilizing a Packaged Disaster Hospital, Price advised, they will provide greatly increased operational capability for protection of their own communities and for support of the region and the state. "Close liaison, planning and cooperation between the hospital staff and the community are vital," he stressed, "since a Packaged Disaster Hospital cannot operate without such supporting community services as communications, police protection, transportation, feeding, laundry, and many others." Noting that natural disasters can have much the same effects in a limited area than enemy attack would have over a large area, he suggested that a major bonus of preparations for nuclear attack "is that we also increase our readiness to aid victims of natural disasters."

In conclusion, Price turned to the goal of the Division of Health Mobilization, which is, he said, "to provide the highest possible quality of survival—and the greatest number of survivors." ▲

EXERCISE (*Continued from page 6*)

ister over 49 CBC and independent radio stations in Ontario and Quebec.

One of the problems encountered during the exercise was a request for "shelter" at one of the emergency centres by "evacuees". Arrangements were made by Company officials to provide such "shelter" at central offices not directly involved in emergency communications. Other exercise problems included penetration and "sabotage" of the emergency centres to test security arrangements.

In addition to observations compiled by a special recorder at each centre, 21 individual critiques were received from observers and other exercise personnel. According to the final assessment by Bell Canada officials, the exercise was successful and its purpose was fully achieved. The flow of messages was smooth and efficient. The heavy volume of message traffic proved the adequacy of the Company's emergency communications network. Alerting procedures were tested and found to be workable. The damage assessment and restoration groups proved themselves capable of recommending and directing restoration procedures. And, more significantly, a cadre of personnel, conversant with emergency operating procedures and techniques, has been developed.

The exercise was also useful in indicating a number of desirable changes and modifications in operating procedures established for emergencies. These relate to, among other things, replacing regular clocks with digital clocks, providing a low volume paging system, and defining more clearly the areas of responsibility for emergency personnel.

It is planned to hold another exercise, encompassing all members of the Trans-Canada Telephone System, in the near future. ▲

General view of company operations centre

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